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ABSTRACT

The Teenage Health Teaching Modules (THTM) program is a health education curriculum for adolescents. Each THTM module frames an adolescent health task emphasizing development of self-assessment, communication, decision making, health advocacy, and self-management. The goals of this module are to acquaint secondary students with the problems of occupational safety and health, help them to establish good attitudes toward job-related safety, and prepare them to promote occupational safety in their future work place. Classroom activities are outlined in which students: (1) are introduced to the field of occupational health and safety; (2) examine various attitudes toward job safety and health and explore how those attitudes may affect one's willingness to take precautions; (3) develop a plan to investigate the safety and health risks of an occupation of their choice; (4) practice ways of encouraging co-workers to adopt health and safety precautions; and (5) report on what they have learned about hazards of selected occupations and draw conclusions about where to find reliable information about any profession or industry. Activities involve discussions, mini-lectures, role-playing, and small-group reports on outside research. (JD)

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Teenage Health Teaching Modules

Improving Health and Safety In the Workplace

Field Test Edition, 1982

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This is one module in the Teenage Health Teaching Modules (THTM) program, a health education curriculum for adolescents developed by Education Development Center, Inc. (EDC) and funded by the Centers for Disease Control, Center for Health Promotion and Education, Public Health Service, U.S. Department of Health and Human Services.

The overall goal of the THTM program is to provide secondary school students with knowledge, skills, and understandings that will enable them to act on behalf of themselves and others in health-enhancing ways. Each THTM module frames an adolescent health task and is designed to help students contribute to their own present and future health and well-being, and that of the families, schools, and communities to which they belong.

The THTM program emphasizes development of the following health skills: self-assessment, communication, decision-making, health advocacy, and self-management. For a complete description of the THTM program, additional materials, or assistance in using these materials, please write or call Teenage Health Teaching Modules, Education Development Center, Inc., 55 Chapel Street, Newton, MA 02160, (617) 969-7100.

Teenage Health Teaching Modules:

An Introduction to the Program
Health is Basic
Understanding Growth and Development
Being Fit
Eating Well
Living with Feelings
Living in Families
Having Friends
Protecting Oneself and Others: Smoking, Drinking, and Drugs
Handling Stress
Preventing Injuries
Locating Health Resources
Using New Health Research
Promoting Health in Families
Acting to Create a Healthy Environment
Improving Health and Safety in the Workplace
Planning a Healthy Future

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Contents

Introduction 1

Goals of the Module 7

Module Overview 8

Activity One: A Look at Health and Safety in the Workplace 10

Activity Two: Exploring Health and Safety Attitudes: How You Feel Affects What You Do 34

Activity Three: Finding Reliable Information 46

Activity Four: Workers Helping Workers 55

Activity Five: Sharing Research Findings 63

Other Recommended Programs and Resource Materials 65

Special Thanks

The Teenage Health Teaching Modules Project and the authors of this guide wish to extend sincere thanks to the Association for the Advancement of Health Education (AAHE) for their kind permission to adapt portions of their publication Teaching Occupational Health and Safety at the Secondary and College Level in this module. In particular, we would like to thank Ms. Linda Moore and Dr. Becky J. Smith for their assistance. Teaching Occupational Health and Safety is a highly readable, informative guide that presents an overview of occupational health and safety issues and provides suggestions for conducting 18 learning activities. We enthusiastically recommend it for teachers who may wish to supplement the activities in this module.

Special thanks also go to Ms. Frances Ogasawara, Occupational Health Manager, and Mr. Roger Schmidt, Associate for Educational Development, of the American Lung Association for their help in the initial conceptualization of this module. Finally, we would like to thank Mr. Thomas Brown, Policy Analyst, Office of Assistant Secretary for Policy Evaluation and Research, U.S. Department of Labor, for his assistance in compiling occupational health and safety statistics.

Introduction

The magnitude of safety and health hazards related to the workplace is astonishing. With respect to safety, in 1980 it was estimated that:

- 13,000 workers died as a result of work-related injuries. Two and one-half million work-related disabling injuries were reported.
- Time lost due to work-related injuries amounted to 42 million person days, equivalent to the shutdown of plants with nearly 200,000 workers for an entire year.
- The direct costs to both employers and employees as a result of work-related injuries amounted to $30.2 billion, or approximately $310 for every American worker.

Unlike the more obvious acute incidents, such as burns, falls, or poisonings, that make up work-related injuries, occupational diseases are more difficult to recognize, document, and understand. However, the following estimates are instructive:

- Approximately 100,000 deaths each year are thought to be caused by occupational diseases--more than twice the number killed annually on the nation's highways.
- Sixty-five percent of all industrial workers are exposed to toxic substances or harmful physical conditions, such as excessive noise or vibrations.
- Workplace exposure to carcinogens accounts for between 5 and 15 percent of the 400,000 annual cancer deaths in this country. Some experts think that the percentage is even higher.
- Scientists estimate that between 1982 and the end of the century, 175,000 workers who were exposed to asbestos before 1980 will develop fatal cancers as a result of that exposure.

Some work-related diseases are well known and easily linked to an occupational origin. Asbestosis, for example, is easily recognizable as a work-related disease, because the worker's lungs contain asbestos that clearly comes from working with the substance. Many other diseases are easily recognizable as job-related--either because a workplace substance accumulates in the lung (as with brown lung disease, in which cotton dust accumulates) or because the disease pattern is found only in a particular group of workers (such as the fume fever that afflicts smelters).

However, it is often difficult to recognize occupational diseases and to pinpoint their origin in the workplace. One reason for this difficulty is that many workplace diseases are chronic and degenerative in nature. Chronic, degenerative diseases are ones that gradually weaken the body. They build up slowly, sometimes invisibly, over a long period of time. It may take, for example, 20 or 30 years for a worker to develop cancer after exposure to asbestos, benzene, radiation, or other workplace carcinogens. Often people who develop chronic diseases suffer only mild symptoms in the beginning, like a cough, headache, or indigestion, and may not attribute the symptoms to their origin in the workplace. Many people who develop chronic diseases suffered no symptoms until their disease was well underway. The situation is further compounded by the fact that most doctors have not been trained to make the link between occupational hazards and disease.

Another reason it is difficult to document occupational diseases is that many factors, both in the workplace and beyond, may contribute to them. We know, for example, that air traffic controllers, who experience considerable occupational stress, have higher rates of hypertension than the population at large, but it is difficult to say with accuracy that any particular air traffic controller developed hypertension as a result of job pressures. In addition to stress, hypertension is thought to be affected by smoking, levels of physical exercise, diet, heredity, and gender. When there are so many possible factors, it becomes easy to dismiss or minimize the role of workplace hazards.

We tend to think of workplace illnesses and injuries primarily in terms of blue-collar and industrial occupations, but countless white-collar workers are also subject to a variety of hazards on the job. Actors, barbers, hairdressers, dentists, doctors, clerks, and nurses, for example, are all exposed to poisonous substances in their work. "Executive stress" has become a fashionable topic in the popular press. Even office work exposes many of the country's 25 to 30 million clerks

and secretaries to ozone and methanol poisoning from office copying machines, glare from fluorescent lights, excessive noise from typewriters, computers, and tabulating machines, back strain and muscle fatigue, hemorrhoids, and stress from boredom and having to meet deadlines.

Safety and health hazards on the job can also have serious consequences for nonworkers. The insulation worker who exposes other family members to cancer by bringing home invisible and indestructible particles of asbestos on clothing and the businessperson who comes home too fatigued or tense from work pressures to devote time to other family members are just two examples of occupational health problems that can have adverse consequences for people who may not be currently working at all.

Given the immensity and varied nature of the occupational safety and health problem, there are three cogent reasons why young people should become familiar with issues related to illness and injury in the workplace.

- Good attitudes toward safety and health are best established at an early age. By the time people enter the world of work, they have often become fatalistic or callous in their attitudes toward job safety and health. Citizens need to be educated while they are still young to avoid job-related safety and health risks and to pay attention to early warning signals of impaired health.

- Secondary school is a good time to promote occupational safety and health, because adolescents, as unacceptable as the fact may be to some educators and most students, are a captive audience. Educating employees in preventing work-related injuries and illness is an unpredictable proposition: it is extremely difficult to gain access to working people for the purpose of educating them about their risk of job-related diseases and injuries. Moreover, industry, government, and organized labor are not always able to protect the worker fully. They do not have the money, time, or, in many cases, incentive to do so. Given these constraints to educating adult workers, we should take advantage of the single occasion in our society when the vast majority of the population can be successfully reached to provide a thorough background in occupational safety and health.

- Occupational safety and health education is necessary so that teenagers can explore the disease and injury record of various occupations before selecting a career to pursue

or a job to take. Prior to choosing an occupation, adolescents should be encouraged to weigh the hazards of various jobs along with more common considerations like pay, nature of the work, and hours. Once people are committed to a career ladder or are actively employed in a job, the opportunity and motivation to change occupations if their current work is found to entail undesirable safety or health risks are severely limited.

In this module, we hope first to create awareness among students of the nature and magnitude of job-related hazards and the possible effects of workplace injuries and illness on an employed person and his or her family. All students need to become familiar with at least the following basic concepts:

- The scope of occupational safety and health, including injuries and illnesses and the effects of work on emotional as well as physical health.

- The magnitude of the problem--how widespread and serious it is and how many safety and health hazards are not readily apparent but must be discovered and investigated.

- Causation, including not only worker carelessness, faulty equipment, and toxic substances, but also emotional upset, fatigue, insufficient training, and management's failure to eliminate or reduce the potential for accidents and diseases.

- Effects on family life--the fact that occupational safety may affect nonworking members of the family as well as employed members, both economically and psychologically.

- Social issues involved, including the role of government, industry, and organized labor.

- Worker iniative--the importance of employees relying on their own initiatives to protect their safety and health.

Second, we hope to help adolescents develop the skills they will need later in life as employed people to identify safety and health hazards on the job and determine how to eliminate or minimize them. Obviously, education cannot inform students about all the safety and health dangers of every occupation. Furthermore, the risks are constantly changing as old hazards are removed and new ones are discovered or introduced. However, education can help students develop the skills to learn by themselves about safety and health risks their jobs may entail and where they can secure reliable safety and health information.

The module fosters attitudes in students that will motivate them as employed persons now or later in life to protect their safety and health on the job. The activities stimulate students to:

- View work as a source of potential safety and health hazards.

- Consider, as likely future family members, the welfare of their spouses and children in terms of taking appropriate precautions in the jobs in which they will eventually be employed.

- Realize that their best protection against work-related injuries and illnesses is a consistent caveat faber attitude--"let the worker beware"--because they cannot rely on management, government, unions, or often even their own coworkers to safeguard them completely.

- Feel that they can develop or secure the resources and skills needed to learn what the risks of their particular job may be.

- Be aware that as employed persons they will have the right to take an active part in minimizing or eliminating whatever dangers may exist where they work.

Furthermore, it is clear that everyone has nonrational and irrational, as well as rational, reasons for disregarding safety and health precautions and taking risks, whether at the workplace, on the highway, or in the home. The activities have therefore been designed to help students to identify, explore, evaluate, and where appropriate, modify all the reasons they and other people may have for failing to follow proper work and hygiene procedures on the job.

Another characteristic of these activities is that they encourage students to share information and ideas with each other about job-related diseases and accidents. This instructional strategy has been built into some of the activities for two reasons. First, students themselves have a great deal of information and many valuable opinions they can profitably share with each other. Second, teenagers need to be encouraged to exchange ideas about safety and health so that when they become employed adults they will already have had experiences in peer education that they can repeat with their coworkers as a supplement to other methods for learning about the hazards of their jobs. Peer education among employed people is extremely valuable for learning about these dangers,

becoming motivated to avoid them, developing a sense of solidarity in the face of obstacles to worker safety and health, and helping to identify patterns of risks that individual, isolated workers might otherwise underestimate.

Two serendipitous effects may emerge from the study of occupational safety and health. First, it may contribute to the general social climate of concern for job-related illnesses and injuries as students, in their future capacities as voters, industry and union officials, and government policy makers, become fully responsive to the need to make the workplace a healthful and safe environment. Second, students may be inspired to make a career choice to enter the field of occupational safety and health as industrial hygienists, safety personnel, and occupational health nurses, physicians, and scientists, a field in which there is an estimated national shortage of 35,000 to 50,000 such specialists.*

An Additional Note

In Activity Three, students select an occupation they wish to investigate and develop a plan for conducting their research. In preparation for that Activity, we suggest that you collect as many resource materials as possible and bring them into classes. Free pamphlets and booklets are available from the Occupational Safety and Health Administration and the American Lung Association. We also highly recommend the book, Work Is Dangerous to Your Health, as background for both you and your students. Information for ordering these materials and others is listed at the end of the guide under "Other Recommended Programs and Resource Materials." One suggestion in Activity Three is for students to visit work sites as part of their research. If you plan to do this, parental and administrative approval as well as liaison with the businesses will be necessary, and you will probably want to begin that process as soon as possible. See Activity Three for details.

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* Much of this introduction is adapted from Peter Finn, "Occupational Safety and Health Education in the Public Schools: Rationale, Goals, and Implementation," Preventive Medicine 7 (1978) pp. 245-259. Reprinted by permission of Academic Press.

Goals of the Module

- To encourage students to develop and maintain an open, assertive interest in occupational health and safety.
- To help students recognize that, with information and practice in communication skills, they can act on behalf of themselves, their families and friends, and the general public to promote worker health and safety.
- To provide students with the research skills to investigate the hazards of any profession or industry.
- To encourage students, as future workers, to share their concerns about specific health and safety precautions with coworkers and with management.
- To predispose students to follow the appropriate advice of employers, coworkers, unions, and government sources with respect to the steps they should take to protect themselves.
- To encourage students to alert their families to potential health hazards associated with their relatives' occupations and to suggest steps they can take to reduce these hazards.
- To encourage students to consider occupational health and safety concerns in their selection of a career or job.

Module Overview

ACTIVITY	DESCRIPTION	INSTRUCTIONAL METHOD	# OF CLASS PERIODS
<u>One</u>			
A Look at Health and Safety in the Workplace	Students are introduced to the field of occupational health and safety. In small groups they discuss scenarios which highlight key occupational health and safety issues. <u>Homework</u>: Students interview family members (including homemakers) or other adults about hazards of their work.	Opening discussion; discussion of scenarios; interviewing assignment	1
<u>Two</u>			
Exploring Health and Safety Attitudes: How You Feel Affects What You Do	Students examine various attitudes toward job safety and health and explore how those attitudes may affect one's willingness to take precautions. (An optional activity is included.)	Small-group discussion of vignettes; drawing inferences about attitudes; optional mini-lecture; optional tallying of "Family Interview Questionnaires"	1 (2 days if optional activity is used)

ACTIVITY	DESCRIPTION	INSTRUCTIONAL METHOD	# OF CLASS PERIODS
Three			
Finding Reliable Information	Students develop a plan to investigate the safety and health risks of an occupation of their choice. Homework: Students conduct their research and fill out a chart which summarizes their findings.	Class and small-group discussion; research plan; chart	1 (plus out-of-class time for research)
Four			
Workers Helpng Workers	Students practice ways of encouraging coworkers to adopt health and safety precautions.	Role-playing (or alternatives to role play, such as class discussion and Dear Abby writing assignments)	1
Five			
Sharing Research Findings	Students report on what they have learned about hazards of selected occupations and draw conclusions about where to find reliable information about any profession or industry.	Small-group reports	1

Activity One

A Look at Health and Safety in the Workplace

Objectives

Cognitive: Students will be able to:

- Identify at least four problems associated with occupational health and safety.
- Provide reasons why occupational health and safety is an important area to study.

Affective: Students will:

- Recognize the importance of studying occupational health and safety.
- Gain confidence that they can influence workplace health and safety conditions.

Skills: Students will be able to:

- Develop plausible reasons to explain why many workers find it difficult to press for health and safety standards and why they do not always take precautions on their own behalf.
- Interview family members about workplace (including homemaking) hazards.

Activity at a Glance

Students are introduced to the field of occupational safety and health and told why it is important to study it. In

small groups they discuss scenarios that highlight key occupational health and safety issues. Then, in a homework activity, they interview family members (including the homemakers) about hazards they experience in their work.

Preparation

1. Read the background information for this activity, pp. 18-28. You may wish to duplicate some or all of this material and assign it as homework at various points in the module.

2. Duplicate "Scenarios Related to Key Issues in Occupational Safety and Health" and cut the scenarios apart so that you can give one to each of several small student groups. (Note that all material to be duplicated for student use in each activity appears on boxed pages at the end of the activity.)

3. Duplicate "Family Interview Questionnaires," one for each student.

Procedure

Note to Teachers:

Do not try to cover too much in this activity. Simply provide an overview and introduction to the variety of occupational safety and health topics to make students aware of what the major issues are. However, be sensitive to your students' special concerns and be prepared to spend more time on the aspects of occupational safety and health that particularly interest them.

Because safety issues are likely to be more apparent to your students than work-related diseases, you will probably need to reinforce that this module is about both disease and injury, health and safety. Help them distinguish acute episodes, such as falls, burns, or poisonings from chronic, degenerative diseases. Explain that chronic, degenerative diseases build up slowly, sometimes invisibly, over a long period of time, gradually weakening the body. They are often difficult to detect because early symptoms are often nonexistent or mild enough to be overlooked. Most doctors have not been trained to link occupational hazards with disease and do not inquire

about the substances patients are exposed to or the conditions under which they work. Moreover, many factors are thought to contribute to today's major diseases, so that it is sometimes difficult to establish one specific work-related cause.

1. Begin the activity by asking students who have held part-time or summer jobs to tell whether they have ever had an injury on the job or become ill because of their work, or whether their jobs included health or safety problems they had to pay particular attention to. List on the blackboard the jobs they have had and associated safety and health risks that they mention. Amplify the list by asking the students if they are aware of any job-related injuries or illnesses members of their families have experienced as a result of their work.

Then suggest a few occupations, such as the following, and ask what injuries or diseases the class feels might be associated with them: professional athlete, homemaker, typist, police officer, mail carrier, auto mechanic, chemist, actor, waiter and waitress, corporate executive, bartender, construction worker, firefighter, taxi driver, welder, miner, nurse, doctor, musician. (You might also discuss some of the hazards of being a teacher or relate personal experiences you may have had in other jobs where safety or health risks were present.) Summarize by noting the large number of jobs that appear to present hazards of some kind and the broad spectrum they represent from blue collar to white collar, from homemaker to office worker, from artist to technician.

2. Ask the students why it might be valuable to study occupational safety and health at their age, and why this might not be a good time to learn about this field. Encourage them to debate with each other the merits of both positions. Then suggest some reasons why it can be important for them to investigate work-related injuries and illnesses now, using the rationales presented in the introduction to this guide, including:

- Assistance in planning for a career.
- Help in assessing the hazards of jobs in which they are currently employed.
- An opportunity to develop appropriate attitudes toward safety and health at an early age.
- The realization that industry and government cannot be expected to provide all the information they will need as employed people regarding the hazards of their future jobs.

- The importance of investigating the hazards of homemaking--a "job" most of the class will be associated with either as homemakers themselves or spouses of homemakers.

3. Ask the students who have held jobs what kind of information and training they were given in safety and health, by whom it was given, and whether they thought it was adequate. Focus not only jobs in businesses, but also on self-employed activities such as lawnmowing or having a paper route. Did they learn about any hazards of their work from coworkers, by trial and error, in pamphlets, from their parents, or in any other ways? How complete was the information? Suggest that studying occupational safety and health now will enable students, both now and in the future, to supplement what their employers and others tell them about the hazards of the work. Emphasize that ultimately they are the ones who must protect their own health and safety and take steps to insure that management and labor respond quickly and effectively to any hazardous situation.

4. Point out that nearly every job has its dangers, although the degree of risk varies from one occupation to another, and that occupational health hazards include not only injuries and physical illnesses but also emotional stresses and other problems workers can experience because of pressures on the job. Ask the class to suggest what some of these pressures might be and what effects they might have on an employed person. (You might also refer back to the list of hazards you wrote on the blackboard at the start of the activity.)

5. Read out loud several of the scenarios provided at the end of this activity. Each one raises at least one significant question in the field of occupational safety and health. Break the class into small groups, each with a different scenario, and to discuss the issues and report on conclusions to the rest of the class. Use the suggested answers below as a checklist to be sure all points are raised.

SUGGESTED ANSWERS TO SCENARIOS

Scenario One

Issue: Many employed people--perhaps most--do not appear to know all the dangers their work involves. Why not?

- They cannot afford, emotionally and/or financially, to investigate. Their families depend on them for support, and the loss would be devastating.

- They do not exert themselves to find out.
- They are not informed by management.
- They are deceived by management.
- They have not been reached by government efforts to inform them.
- The dangers are not known yet.
- They do not trust the people who have given them accurate information.

Scenario Two

Issue: Many employed people who are aware of some of the hazards of their work cannot or will not do all they can to protect themselves. Why not?

- Financial losses in salary, bonuses, or overtime may be involved.
- Some people may be unwilling or unable to face the fact that bad things could happen.
- Some people may be afraid of how they will look to others if they take precautions.
- Some people do not tolerate minor frustrations well. They may find it irritating to take the small extra steps that are sometimes necessary for safety's sake.
- Some people ignore suggestions or instructions from supervisors simply because they feel hostile to authority or because they do not trust the intentions of management.
- Sex-role insecurity may be involved. Some men may be afraid of being labeled "sissy" if they take precautions or macho if they are too assertive. Some women may fear looking less feminine or looking too feminine, frail, weak, or in need of protection.

Scenario Three

Issue: Work-related injuries and illnesses, including mental pressures, can cause problems for other members of a worker's family, not just the worker. How might they do this?

- Financial losses may be involved.
- Tensions may build up from spending too much time together as a result of being laid up.
- Tension may build up from spending too little time together as a result of overwork.
- A worker may be unable to be a responsive spouse, parent, or friend because of tensions, illnesses, or injuries on the job.
- Workers may be carrying home toxic substances on their clothing or bodies.

Scenario Four

Issue: Who is responsible when workers are injured or develop illnesses?

- The worker may have been careless.
- The company may have allowed hazards to exist.
- The company may not have educated or trained workers about the existence of hazards and how to avoid them.
- Coworkers may not have warned new workers of a danger or old workers of a newly discovered danger.
- The government may not have inspected the workplace or enforced safety and health laws and regulations.

Scenario Five

Issue: Might a specific job danger indicate that persons with certain physical or emotional problems or traits should not enter that occupation? Are there ways people can prepare for job hazards that might otherwise have adverse effects on their safety or health?

- People with physical handicaps should avoid jobs that require heavy labor they cannot perform or can perform only with difficulty--e.g., people with weak backs should not become coal miners, laundry workers, or nurses.
- People with certain emotional temperaments--e.g., excessive tendencies toward risk taking, low frustration

tolerance, impulsiveness, or depression--should consider avoiding jobs that might exacerbate these traits.

- People considering taking jobs in or training for occupations that present hazards to which they are or may be particularly sensitive can learn about ways to reduce those risks. They can also assess the adequacy of the risk reduction and what their own responsibility would be. For example, would exercises to strengthen back muscles enable someone with a weak back to perform safely jobs requiring heavy lifting, and would the person actually do the exercises regularly?

- Even after making a careful choice a worker may end up in a job involving personal risks, risks that the worker must deal with. If workers avoid jobs or move on to other jobs rather than speaking up for better conditions, management might simply leave the unhealthful practices in place and recruit other workers who may be desperate for work or simply unaware of the dangers.

6. Conclude (if you did not begin) the activity by explaining that, while you are not an expert in the safety and health hazards of every job, what you can do is help students to develop and practice skills to learn about these hazards on their own, both now and in the future. Let them know that in subsequent activities they will be developing and practicing the appropriate skills.

7. Homework: Distribute copies of the "Family Interview Questionnaire." Ask students to use the questionnaires to interview at least two family members (a parent, grandparent, guardian, or older sibling). One of the questionnaires has been developed specifically for the family homemaker. These questions should be asked of the person who has the principal homemaking responsibilities. If homemaking responsibilities are shared, the student can talk with more than one person.

(Note: We have included the homemaker questionnaire here because, although homemaking is not paid work, we believe it should be seen as a career, complete with its own safety and health hazards. Homemakers are exposed to a variety of dangerous substances in the home, including a number of potentially harmful cleaning fluids and compounds. In addition, homemakers are prone to burns during cooking or strains from lifting cleaning equipment, groceries, and children. Finally, and perhaps most significantly, homemakers are often subject to a variety of emotional stresses, including boredom, repetitiveness in their work, lack of recognition for their work,

and isolation. Homemakers who are also wage earners may have all the additional problems of a 50- to 80-hour work week.)

Instruct students to interview their family members at a time when they can give their serious and undivided attention to the questions. Tell your students not to record the names of their family members on the questionnaire and to assure the people they interview that their answers will remain anonymous.

Make sure that students understand that the purpose of this homework assignment is twofold: one, to help them focus on workplace hazards in a concrete, personally meaningful way, and, two, to set the stage for them to share what they will learn in this module with their parents.

Results of the questionnaires need not be tallied, and students need not share them with anyone else. (To check that the assignment was done, you can simply have students place the completed questionnaires on their desks so you can quickly check that they were filled in without actually reading them.) Explain that instead of a formal analysis, the class will spend the first five or ten minutes of the next class period in a general discussion of responses to the interviews. Students may reveal as much or as little information as they like. It is extremely important to respect the students' and their families' privacy. Invite, but do not require, comments.

Note: If there is any sense that this kind of family involvement would be inappropriate, feel free to drop the activity or suggest that students interview nonfamily members.

Classes that are interested and have enough time can perform a longer more formal optional analysis of the questionnaires. See Optional Activity in Activity Two.

JOB SAFETY AND HEALTH: WHAT'S THE PROBLEM?*

Safety and health hazards can be found in nearly every type of work, from construction and heavy manufacturing to service and health care industries.

Here are a few examples:

- Work with asbestos. Between 8 and 11 million workers have been exposed to asbestos, a cancer-causing substance, since World War II. More than 2 million of them will die of asbestos-related cancers. Asbestos may be present in many kinds of workplaces, including shipyards, auto repair shops, and construction projects. Working around asbestos poses a special, very severe threat for smokers. Asbestos workers who smoke run an eleven times greater risk of developing lung cancer than do asbestos workers who do not smoke.

- Chemicals and toxic substances. Abnormally high cancer rates have been found among such groups as foundry workers, leather workers, shoe workers, chemists, textile workers, rubber workers, metal workers, furniture workers, and printing press workers.

- Construction. About 800 construction workers are killed each year in accidents which might have been prevented.

- Health care work. Hospital and dental workers exposed to leaking anesthetic gases risk liver disease and miscarriages. Dentists using mercury experience higher rates of nervous and emotional disorders. X-ray technicians may suffer ill effects from radiation exposure.

- Farms. Hundreds of farm workers are killed each year and tens of thousands are injured by machinery accidents and other hazards. Many others suffer health damage from exposure to pesticides, chemical fertilizers, and other chemicals.

- Mining. Three out of four coal miners who live to retire on pension have "black lung" disease caused by coal dust in their lungs. The disease is fatal, and cannot be cured.

- Textile manufacturing. Approximately 600,000 textile workers are exposed to cotton dust, which can cause disability and death from lung disease.

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*Adapted from Job Safety and Health; Answers to Some Questions (Washington, D.C.: U.S. Department of Labor, Occupational Safety and Health Administration, 1980).

How Do Workplace Hazards Threaten Us?

- Injuries. Workplace injuries are caused by a wide variety of hazards. Arms, legs, or fingers can be caught in unguarded machinery. Improper maintenance of electrical equipment can result in fatal shocks. Fires and explosions may claim many lives at one time.

- Cancer. There are hundreds of chemicals suspected of causing cancer, and millions of workers may be exposed to them on the job.

  Since 1900, the cancer death rate in the U.S. has nearly tripled. While there are many reasons for this, one obvious cause is the increased use of new, untested substances in the workplace.

- Noise. Millions of workers face possible hearing loss caused by workplace noise.

  Noise can be a hazard in other ways as well. Anyone who has been startled by a sudden noise has experienced tension and quickened heart beat. Some noises in the workplace can cause the body to tense up in much the same way, causing quickened pulse rate, increased blood pressure, and narrowing of the blood vessels. Over a long period of time, these may place an added burden on the heart.

  Noise can also contribute to accidents by making it impossible to hear warning signals or approaching vehicles.

- Lungs. Dust, fumes, and mists can cause many health problems by burning, irritating, or otherwise damaging the lungs. Some work-related lung diseases are incurable and fatal. Some chemicals can aggravate cases of bronchitis or emphysema.

- Skin. Many workplace chemicals strong enough to dissolve, degrease, disinfect, harden, soften, fuel, or lubricate are also serious threats to human skin. In fact, skin disorders are the most commonly reported work-related health problems in the U.S., with hundreds of thousands of cases occurring every year. The result--reddened, itchy, blistered, or flaky skin--is called "dermatitis."

- Nervous system. Some chemicals enter the blood stream by penetrating the skin. Others become vapors or fumes and enter through the lungs. Still others may be ingested into the stomach.

  Once in the blood, they may assault the central nervous system, injure the kidneys or liver, cause bone marrow damage and anemia, or induce psychological disorders.

Some chemicals may cause headaches, dizziness, sharp intestinal pain, tremors, loss of coordination or feeling, or insomnia. Heavy exposure in some cases can cause paralysis or convulsions, and can be fatal.

Substances which attack the nervous system include lead, arsenic, carbon monoxide, benzene, inorganic mercury, and chemicals known as "halogenated hydrocarbons."

- Heart. It is believed that some substances speed up the body's formation of cholesterol fat. Over the years, cholesterol can stiffen and narrow the blood vessels that supply the heart with oxygen. If this "hardening of the arteries" becomes severe, the heart muscle is starved of oxygen and a heart attack may result.

  Lung damage caused by workplace substances can also harm the heart by making it work harder to pump enough oxygen through the body.

  Physical stress from severe heat and cold in the workplace also can put an added burden on the heart.

- Reproductive organs. Some job health hazards threaten not only this generation but unborn children as well.

  Birth defects, stillbirths, miscarriages, and sterility can all result from exposure to certain chemicals or toxic substances.

  Some 200,000 children are born each year in the U.S. with serious birth defects, and in two-thirds of those cases the cause of the defects is unknown. No one knows how many of them may be caused by workplace substances.

What Can Be Done?

Management and workers in industries across the country have demonstrated that control and eradication of most hazards is usually possible.

The first step is to try to eliminate the hazard. This may involve using different materials or changing the work process. If elimination of the hazard isn't possible, the next best strategy is to contain its effects.

Other controls such as better maintenance and improved housekeeping can be used as well.

Changes in work processes. Many dangerous materials can be replaced. Often, less toxic chemicals can be substituted for more toxic ones.

Flexible wire and pipes often conduct less noise than rigid machine parts.

Large-diameter centrifugal fans operating at slower speeds are quieter than small-diameter propeller fans operating at high speeds.

Some welding operations--which create dangerous gases and metal fumes--can be replaced with "crimping" of metals to form a joint.

Water can be used in processes which create a lot of dust.

Isolation and enclosure. In many workplaces, hazards from the hottest, noisiest, or dirtiest process are allowed to spread throughout the workplace.

If possible, a hazard should be segregated in a room or building. If the process can't be moved, it may be possible to isolate it with portable walls or baffles. The operator can be isolated in a soundproof and/or air-conditioned booth or cab.

Bins, conveyors, and vats containing toxic substances can be covered so that dusts or fumes can be drawn away without ever entering the workplace air.

Ventilation. In "local exhaust" systems, fans draw workplace pollutants away from the workers and into hoods or ducts, to be captured by a filter or collector.

Where local exhaust isn't possible, "dilution" ventilation of an area can reduce a hazard by moving fresh air in and polluted air out.

Work practices. Rotating workers in and out of the most dangerous jobs will limit the exposure of any one worker until a permanent engineering solution is found.

Personal protective measures. Use of respirators, goggles, hard hats, helmets, shields, gloves, shoes, safety glasses, barrier creams, and other personal protective measures can help reduce personal danger.

In some cases the adoption of personal protective measures may be a simple, necessary step for safety's sake.

However, sometimes personal protective measures are difficult or uncomfortable to wear and may not afford complete protection. Therefore, whenever possible, it is preferable to reduce the hazard at its source, thereby making personal protective measures unnecessary.

WHAT IS THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE OCCUPATIONAL SAFETY AND HEALTH ACT?*

OSHA's Purpose

Under the provisions of the Occupational Safety and Health Act of 1970, the Occupational Safety and Health Administration (OSHA) was created within the U.S. Department of Labor to:

- Encourage employers and employees to reduce hazards in the workplace and to implement new or improve existing safety and health programs;
- Establish reporting and recordkeeping procedures to monitor job-related injuries and illnesses;
- Develop mandatory job safety and health standards and enforce them effectively; and
- Encourage the states to assume the fullest responsibility for establishing and administering their own occupational safety and health programs, which must be "at least as effective as" the federal program.

The Act's Coverage

In general, coverage of the Act extends to all employers and their employees in the 50 states, the District of Columbia, Puerto Rico, the Canal Zone, and all other territories under federal government jurisdiction.

Under the Act's coverage come employers and employees in such varied fields as construction, longshoring, agriculture, law and medicine, charity and disaster relief, organized labor, and private education. Groups and businesses not covered under the Act include: self-employed persons; family-owned and operated farms; workplaces already protected by other federal agencies under other federal statutes (e.g., mines); and federal; state, and local government employees.

Standards

The general duty clause of the Act states that each employer "shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

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*Adapted from All About OSHA (Washington, D.C.: U.S. Department of Labor, April 1976).

In carrying out its duties under the Act, OSHA is responsible for establishing legally enforceable standards. OSHA standards may require conditions, or the adoption or use of one or more practices, means, methods, or processes reasonably necessary or appropriate to protect workers on the job. Even in cases where OSHA has not promulgated specific standards, employers are responsible for following the intent of the Act's general duty clause.

Free single copies of each standard may be obtained from the OSHA office nearest you (see addresses at the end of this guide).

Standards Development

OSHA can begin standards-setting procedures on its own initiative or on petitions from other parties, including state and local governments, employer or labor representatives, or any other interested person. If OSHA determines that a specific standard is needed, any of several advisory committees may be called upon to develop specific recommendations.

Recommendations for standards also may come from the National Institute for Occupational Safety and Health (NIOSH), established by the Act as an agency of the Department of Health, Education, and Welfare.

NIOSH conducts research on various safety and health problems, including the psychological factors involved; and it provides technical assistance to OSHA. Especially important is NIOSH's investigation of toxic substances and its development of criteria for the use of such substances in the workplace.

While conducting its research, NIOSH may make workplace inspections (see sample Health Hazard Evaluation Request form following this section), gather testimony from employers and employees, and require that employers measure and report employee exposure to potentially hazardous materials. NIOSH also may require employers to provide medical examinations and tests to determine the incidence of occupation illness among employees.

Workplace Inspection

In order to enforce its standards and regulations, OSHA is authorized under the Act to conduct workplace inspections. Every establishment covered by the Act is subject to inspection by OSHA compliance safety and health officers (inspectors).

Constraints

Unquestionably, the creation of OSHA was an extremely significant breakthrough for occupational health and safety. Nevertheless, there are limitations and difficulties. One major constraint is that the number of

OSHA inspectors is severely limited, thereby reducing OSHA's ability to enforce its standards. Second, the standards themselves often represent a compromise between economic interests and health concerns, because the Department of Labor is supposed to take "economic feasibility" into account when it sets the standards. OSHA standards for noise, for example, are set at a level which can still cause hearing loss for a substantial percentage of the population. Other factors that affect OSHA's ability to respond to requests include the nature of the political climate, public attitudes toward worker health, and financial constraints.

Employer Responsibilities and Rights

Employers have certain responsibilities and rights under the Occupational Safety and Health Act of 1970. The checklists that follow review many of these.

Responsibilities. Employers must:

- Provide a hazard-free workplace and comply with the occupational safety and health standards, rules, and regulations issued under the Act;
- Make copies of OSHA standards available to employees for review upon request;
- Make sure employees have and use safe tools and equipment (including personal protective equipment) and that such equipment is properly maintained;
- Provide medical examinations when required by OSHA standards;
- Keep OSHA-required records of work-related injuries and illnesses, and post the annual summary during the entire month of February each year (this applies to employers with eight or more employees);
- Post, at a prominent location within the workplace, the OSHA poster informing employees of their rights and responsibilities; and
- Post OSHA citations of apparent violations of standards or of the general duty clause at or near the worksite involved.

Rights. Employers have the right to:

- Seek advice and off-site consultation as needed by writing, calling, or visiting the nearest OSHA office;
- Be advised by the compliance officer of the reason for an inspection and have an opening and closing conference with the compliance officer;

- Apply to OSHA for a temporary exception ("variance") from a standard if unable to comply because of the unavailability of materials, equipment, or personnel to make necessary changes within the required length of time;

- Avail themselves, if they are small business employers, of long-term loans through the Small Business Administration (SBA) to help bring their establishments into compliance, either before or after an OSHA inspection; and

- Be assured of the confidentiality of any trade secrets observed by an OSHA compliance officer during an inspection.

Employee Responsibilities and Rights

Although OSHA does not cite employees for violations of their responsibilities, each employee "shall comply with all occupational safety and health standards and all rules, regulations, and orders issued under the Act" that apply to his or her own actions and conduct on the job.

Responsibilities. Employees should:

- Follow all employer safety and health rules and regulations, and wear or use prescribed protective equipment while engaged in work;

- Report hazardous conditions to the supervisor; and

- Report any job-related injury or illness to the employer, and seek treatment promptly.

Rights. Employees have the right to:

- Review copies of any of the OSHA standards, rules, regulations, and requirements that the employer should have available at the workplace;

- Request information from employers on safety and health hazards in the area, on precautions that may be taken, and on procedures to be followed if an employee is involved in an accident or exposed to toxic substances;

- Request (in writing) the OSHA area director to conduct an inspection if they believe hazardous conditions or violation of standards exist in their workplace;

- Have their name withheld from their employer, upon request to OSHA, if they file a written and signed complaint;

- File a complaint to OSHA within 30 days if they believe they have been discriminated against, discharged, demoted, or otherwise penalized because of asserting an employee right under the Act, and be notified by OSHA of its determination within 90 days of filing;

- Have the authorized employee representative where they work accompany the OSHA compliance officer during the inspection tour;
- Observe any monitoring or measuring of hazardous materials and have the right of access to records on those materials;
- Request a closing discussion with the compliance officer following an inspection; and
- Submit a written request to the National Institute for Occupational Safety and Health (NIOSH) for information on whether any substance in their workplace has potential toxic effects in their concentrations being used, and have their name withheld from their employer if they so request.
- Refuse a work assignment if there is a reason to believe that there is a real danger of death or serious physical injury involved, provided that there has been a request to the employer to remove the danger and the employer has refused, and provided that the danger cannot be eliminated quickly enough through normal OSHA enforcement procedures.

HOW SUCCESSFUL HAS INDUSTRY BEEN IN ITS CLEAN-UP EFFORTS?*

Although many companies have anticipated that the costs of meeting OSHA standards would drive them out of business, companies often find that it is possible to make changes at a reasonable cost and with side-benefits in the form of increased productivity as well as increased worker safety.

- Employers often find cheaper engineering controls than they originally thought possible.
- More emphasis is put on cost savings from good maintenance and housekeeping.
- Increased productivity may result, further reducing costs.
- It may be possible to improve on existing controls in the workplace, so that the cost is not what it would be if the company were starting from scratch.
- The installation of controls for one hazard may make it less costly to control other hazards, too.
- As more and more hazard control equipment is produced, its cost often goes down.

Here are two examples of successful industrial clean-up efforts.

Vinyl Chloride

Following the discovery that vinyl chloride causes cancer, OSHA established a new standard in 1974 reducing allowable exposure to the deadly chemical from 500 parts per million of air to only one part per million.

When the new standard was proposed, officials of the chemical and plastics industries said they doubted that it could be met. They cautioned that thousands of vinyl chloride workers might have to be laid off, and that the lack of a substitute could eliminate some two million jobs in industries which use vinyl chloride.

But when the standard went into effect, the industry went to work finding ways to comply.

More efficient methods were found to reduce vinyl chloride waste in the production process, and to keep the chemical from entering the work environment.

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*Adapted from All About OSHA (Washington, D.C.: U.S. Department of Labor April 1976).

Vinyl chloride production rose to record levels in 1976. New vinyl chloride plants were opened, and the predicted layoffs in other industries never took place.

By April, 1978, OSHA sampling for vinyl chloride in 500 workplaces found 93 percent of them obeying the standard! Tens of thousands of workers had been protected from the threat of cancer.

Asbestos

At public hearings in 1972, dozens of industry representatives questioned whether they could meet the OSHA-proposed standard to limit exposure to asbestos. Executives from one company declared that five of the company's plants would have to close if the new standard were enforced.

Once OSHA issued the final standard to help protect workers from cancer, the companies undertook clean-up efforts which included the installation of enclosures, better ventilation, and elimination of particularly hazardous steps in the spinning of asbestos textiles.

According to a recent stock market survey, "the asbestos industry has encountered no significant problems in meeting these requirements."

The most important factors in safeguarding the workplace are diligent employees who observe their work environment and ask questions about its safety, and cooperative management who recognizes that providing a healthful, safe environment is one of the costs of doing business.

SCENARIOS RELATED TO KEY ISSUES IN OCCUPATIONAL SAFETY AND HEALTH

(Make one copy of the following five scenarios. Cut along the dotted lines and give one scenario to each small group of students.)

Scenario One

John Davis works on a coke oven battery in a steel mill, but he does not know that he has a two to ten times higher risk of getting lung cancer than do other steel workers. Why might he be unaware of this important piece of information? Susan Smith works in an office as a secretary and spends a good deal of time copying papers on a small copy machine located in a small room. Why might she not know that the ozone from the machine may be dangerous for her and may be causing the eye irritation she develops on occasion?

Issue: Many employed people--perhaps most--do not appear to know all the dangers their work involves. Why not?

Scenario Two

Rachel Cohen works in an airport and knows that she has a high risk of having her hearing damaged but that she can lessen that risk by wearing ear protectors. She refuses, however, to wear them. Why? Guy Larouché is a hockey player who knows that he risks a serious head injury by not wearing a helmet during play. His coach strongly recommends the wearing of helmets. Why won't he put one on? Juanita Hernandez is a manager in a large company and has been getting an ulcer, as well as feeling very nervous, because of the pressures of her job and the overtime she must put in. But she will not change jobs or slow down her pace. Why not?

Issue: Many employed people who are aware of some of the hazards of their work cannot or will not do all they can to protect themselves. Why not?

Scenario Three

Ruth Santini is an assembly line worker who is bored and unhappy with her job. How might her feelings about her job affect her family? Darroll Washington injured his back as a nurse lifting a patient and has been laid up at home for six weeks. What effects might this have on his family?

Issue: Work-related injuries and illnesses, including mental pressures, can cause problems for other members of a worker's family, not just the worker. How might they do this?

Scenario Four

Fred Stanley, a new worker in the coal mine, was killed when he was struck by a rail car that backed into him, even though its warning bell was ringing. Whose fault was the accident? Sheila O'Brien, who works as an insulator and is in frequent contact with asbestos, developed lung cancer. She also smokes cigarettes. What caused her lung cancer? Joe Radowitz did not use the safety device on his woodcutting machine because it slowed down his work, and the faster he works the more he gets paid. A piece of wood flew out and struck him in the eye. He can no longer see out of that eye. Whose fault was the accident?

Issue: Who is responsible when workers get into accidents or develop illnesses?

Scenario Five

Being a laundry worker may require heavy lifting. Should Roberta Kruger, who has had a chronic lower-back problem, take this job? A large number of bartenders have drinking problems. How can Peter Cabot decide whether to train for this job? All his life Ted Antonopoulos has wanted to be an air traffic controller. However, he is a very nervous person and this job involves a great deal of pressure. Should he train for the job?

Issue: Might a specific job danger indicate that persons with certain physical or emotional problems or traits should not enter that occupation? Are there ways people can prepare for job hazards that might otherwise have adverse effects on their safety or health?

FAMILY INTERVIEW QUESTIONNAIRE

General Questions

1. Does your job pose safety hazards for you and for your coworkers? If so, what are they? _____

2. Have you ever tried to have any of these dangers eliminated or reduced? If so, what have you done and what were the results?

_____

If not, why not? _____

_____

3. To your knowledge, are there any diseases associated with the kind of work you do that might show up in future years? (Coal miners, for example, are known for their high incidence of black lung disease, cotton textile workers for brown lung disease, air traffic controllers for an increased risk of heart disease.) Yes_____ No _____

If so, what diseases? _____

4. Have your coworkers or management taken any measures to eliminate the risk(s)? Yes _____ No _____

If no, why not? _____

5. Do you work around any chemicals, dusts, fumes, or other substances that are or could be dangerous to your health? Yes _____ No _____

If yes, what? _____

6. To your knowledge, has your employer or your union, or have other employees tried to determine whether these substances are potential hazards? Yes _____ No _____

If so, what did they find out? _____

_____

If the substances are dangerous, have any protective measures been instituted? Yes _____ No _____

If yes, what? _____

If no, why not? _____

7. Does your work environment have extremes of hot or cold?
Yes _____ No _____

8. Is your work environment very noisy? Yes _____ No _____

9. Does your job have any harmful effects on your mental health--that is, does it cause any emotional problems or stress for you? Yes____ No ____

   If yes, what aspects of your job create these feelings? _____

   _____

10. Have you ever taken steps to reduce these feelings? Yes ____ No ____

    If yes, what have you done? _____

    If not, why not? _____

11. Did you know about these safety and health hazards before you started this job? Yes _____ No _____

    If so, how did you learn about them? _____

    If not, would you have pursued this career had you known about them in advance? _____

12. How much have you thought about health and safety hazards associated with your job before this interview? A lot ____ Some ___ Not at all ___

13. Are you interested in learning more about the health and safety hazards associated with your job? Yes _____ No _____

    If yes, what would you like to know? _____

    If no, why are you uninterested? _____

Questions for the Family Homemaker(s)

1. Have you ever had an accident or suffered an injury as a homemaker?

   Yes _____ No _____ If so, what happened? _____

   How serious was it? _____

2. Are there any (other) safety risks you feel you are exposed to as a homemaker? If so, what are they? _____

   _____

3. How did you learn about these risks? From your parents? Yes ___ No ___

   Other family members? Yes ___ No ___ Other family members? Yes ___ No ___

   Magazines? Yes ___ No ___ Friends? Yes ___ No ___

   Television? Yes ___ No ___ Advertisements? Yes ___ No ___

   Other _____

4. Have any other homemakers whom you know been injured? If so, how?

_____

5. Have you ever suffered an illness or developed a disease because of your homemaking activities? Yes ___ No ___

If so, what did you develop? _____

How serious was it? _____

6. Have any other homemakers whom you know developed any illnesses or diseases? Yes ___ No ___ If so, what were they? _____

_____

7. Are there any (other) health risks you feel you run by being a homemaker? Yes ___ No ___ If so, what are they? _____

_____

8. What kinds of pressures or unpleasant feelings, if any, does homemaking create for you? _____

_____

How often do you have these feelings? _____

9. Do other homemakers whom you know experience similar feelings?

Yes ___ No ___

10. Do you feel that the other members of your family are aware of the safety, health, and emotional risks of your work that you have described? Yes ___ No ___ If not, why not? _____

_____

If so, how have they become aware of these dangers? _____

_____

11. What would you like to learn more about in regard to safety or health hazards of homemaking? _____

_____

Activity Two

Exploring Health and Safety Attitudes: How You Feel Affects What You Do

Objectives

Cognitive: Students will be able to:

- Recognize that feelings and attitudes about health and safety influence our willingness or unwillingness to take precautions.
- Identify at least four attitudes that can discourage someone from taking safety or health precautions.
- Identify at least four attitudes that can promote the adoption of safety and health precautions.

Affective: Students will:

- Develop positive attitudes toward promoting workplace health and safety.

Skills: Students will be able to:

- Infer attitudes from actions.

Activity at a Glance

By placing themselves in a number of hypothetical work situations, students examine various attitudes toward job safety and health. An optional activity, "Tallying Family Interview Questionnaires," is provided.

Preparation

1. Make one copy of "Workplace Vignettes," and cut apart so that small groups of students will have one or two vignettes to discuss. If you want to see how different groups deal with the same problem, make two copies of each vignette.

2. Duplicate "Attitudes That Help" and "Attitudes That Hinder," one for each student. An alternative is to write these statements on the board before class or while students are discussing the vignettes.

Procedure

1. Before you begin the day's main activity, discuss the homework assignment from Activity One. In order to have time to complete today's main activity, be sure to spend no more than five to ten minutes on the discussion. If you would like to do a longer, more formal analysis of the "Family Interview Questionnaire," see the Optional Activity at the end of this activity. If you choose this option, it will require approximately one additional class period.

In five or ten minutes you will only have time to elicit students' general reactions to conducting the interviews. Here are some guiding questions:

- What, if anything, did you learn by conducting these interviews? Did anything especially surprise or puzzle you? If so, what?
- Do you feel the people you interviewed learned anything from this experience? If so, what?
- How many people mentioned physical health or safety hazards? (Here you may take a quick count and then ask for examples.)
- Were people more apt to mention <u>safety</u> or <u>health</u> hazards? If safety issues were mentioned more often, why might that be the case? (It is easier to recognize safety problems because they are acute: they occur suddenly, often in clear-cut or dramatic ways. Health problems can build up slowly, are easy to confuse with everyday ordinary conditions we take for granted--like coughs, skin irritations, headaches--and may result in chronic diseases that do not become apparent until years later and are not always easily traceable to the work site.)

- How many people mentioned emotional health hazards? (Again, take a quick count, but be sensitive to students who may not wish to share their family discussions in class. If students want to share, invite them to give examples of the kinds of work-related stress that were identified.)

- Did family members express interest in more information on health and safety hazards? (Explain that by the end of the module students should be able to refer their friends and family members to a variety of sources of information. In Activities Three and Five they will research and report on safety and health risks in an occupation of their choice and may wish to select the occupation of one of their family members. In addition to learning about the risks associated with a particular job, they will be learning how to conduct general research on any occupational hazard.)

2. People's attitudes toward safety and health may influence whether they are willing to take precautions against job-related illnesses and injuries, and how they feel about encouraging other people to avoid risks at the workplace. Explain that this activity will help students identify and explore some of these feelings.

3. Pass out the sheets, "Attitudes That Help" and "Attitudes That Hinder" (or copy these statements on the board). Encourage the class to discuss the attitudes from the point of view of explaining why many people engage or fail to engage in safety and health measures, both on and off the job. Ask, for example, why the students themselves do or do not:

- Brush their teeth after every meal?

- Wear safety belts when they drive or ride in a car?

- Ride their bicycles in the same direction as the traffic?

- Signal turns when they ride their bicycles?

- Cross streets before the lights are with them?

- Smoke cigarettes?

- Overeat, eat a great deal of junk food, or drink soda?

- Exercise regularly?

As the students respond to the above questions, have them add to the existing list of attitudes those new attitudes toward safety and health being expressed and point out the ones being reiterated.

4. Divide the class into groups of two to four students. (Alternatives are to have students work individually, in pairs, or as a whole class.) Give each group one or two vignettes. Ask students to discuss:

- What would they do if they were in each situation?
- What would their action or inaction reveal about their attitudes toward safety and health?

Allow five to ten minutes for the discussion. Then ask for a quick show of hands to indicate how many people expressed feelings similar to those on the "Attitudes That Help" and "Attitudes That Hinder" lists. Then ask the class if any other attitudes surfaced. If so, add them to the lists. Be sure to have students express them in first-person statements like the sample ones. Again take a quick tally to see how many people felt that way.

5. If there is time, students can develop their own vignettes (taken perhaps from real work situations they have encountered) for the rest of the class to consider.

6. If there is time and if you feel further clarification would be helpful, use the following mini-lecture notes to summarize the lesson.

NOTES FOR MINI-LECTURE ON WORKPLACE ATTITUDES

How we feel affects what we do. Here are some attitudes that discourage the adoption of health-promoting behaviors in the workplace:

- Unwillingness or inability to face a reality that is just too dreadful to contemplate, such as death, disability, disfigurement, or loss of income. Taking safety and health precautions can be an admission that work and life are dangerous--not a pleasant thought to be regularly reminded of.
- The "it won't-happen-to-me" form of denial, when people feel that even though what they are doing may be dangerous, they will not be injured or become ill because statistically the odds are so small. They may think they are "more careful" than the people to whom injuries and diseases do occur, or they have some other rationalization for believing they are "an exception to the rule."

- Peer pressure, which makes people feel the risk of an injury or disease is worth taking because being ridiculed by coworkers or friends is a more unpleasant prospect.

- Laziness or habit that prevents people from overcoming inertia and making a small extra effort to avoid a safety or health hazard.

- Inability to tolerate minor frustrations, a form of immaturity that prevents people from doing mildly complicated tasks or tolerating minor delays in order to realize a significant safety or health benefit.

- Fatalism, or the feeling that "nothing I can do will affect what happens to me."

- Hostility to authority, which impels or enables some people to ignore suggestions or instructions from persons in authority.

- Sex-role insecurity that discourages some "macho" men from taking precautions they feel are "sissy," and inhibits some women from taking measures they feel convey a lack of femininity.

On the other hand, here are some attitudes that encourage people to act on their own and others' behalf:

Health is an important prerequisite for a happy and rewarding life. Most people believe the old saying, "You can do anything as long as you have your health," but people usually take their health for granted until they start to lose it. The younger a person is the harder it is to imagine not being able to be active with ease and enthusiasm. To feel that nothing is more important than good health is not to lead a life of constant discipline and denial of pleasure. It is, however, to appreciate health as a key to happiness and therefore to take steps to preserve it. It implies respect for the complex organism that is the human body, and belief in the maxim that "an ounce of prevention is worth a pound of cure."

Physical, emotional, and social health are always interrelated. We know that prolonged stress may contribute to disease, and that physical disabilities can strain us emotionally. Workers who are at great physical risk also run the risk of increased mental tension, which can affect not only themselves but their families as well. Conversely, workers whose jobs place them under mental strain often show higher than average rates of physical disesase. (For example, some technical workers, executives, and blue

collar workers who experience high job-related stress show increased rates of heart disease or high blood pressure.) People making health choices or encouraging or discouraging the choices of others need to have a broad concept of health in mind.

Although it is very important to acknowledge and accept differences, there are some differences that are not healthy or worthy of toleration. It is important to respect differences among individuals and groups, but it is equally important not to tolerate behaviors that are self-destructive or that risk other people's health. Under the banner of "do your own thing," many people abdicate responsibility. If a friend is doing something risky, we owe it to ourselves and to the friend to show concern or disapproval, or if the situation warrants, to intervene on his or her behalf.

Each of us can make a difference. Whether it is taking a particular precaution, talking with management about some necessary changes, discussing occupational hazards with the union, or asking a friend to adopt a safety procedure, each person can affect his or her own and others' health and well-being. Change happens when people who care take steps to put their intentions into action. It is personal decisions, responses to health decisions of others, and willingness to speak up, that can help shape a healthy workplace.

People who do not act on their own behalf should not assume that others will. There are many built-in hindrances to improving health and safety in the workplace: management may not want to acknowledge that certain work sites or work procedures are hazardous; workers may worry about cuts in pay or reactions from fellow workers; labor may be more concerned with negotiating wages than with safety. It would be very unwise to assume that somehow health and safety issues were all being taken care of by someone else. Each worker needs to become involved.

7. Optional Activity: Tallying Family Interview Questionnaires

When the interviews have been conducted, have students, working in small groups, analyze the "General Questions" responses in terms of the following questions:

- Did men and women identify different hazards? Which group identified more hazards?

- If similar occupations or types of jobs (for example, white collar vs. blue collar vs. industrial jobs; service professions vs. manufacturing jobs) are represented among the

responses, did people in these similar jobs describe and agree on the same hazards? If not, why not?

Follow-up discussion in small groups or as a class can focus on the following issues:

- How serious and widespread do occupational hazards appear to be among the people interviewed?
- How actively involved are the workers in eliminating or reducing the dangers of their jobs? Should they be more active? If so, what could they do?

Analyzing the "Homemakers' Questions" students can evaluate these questions:

- How prevalent and serious are the hazards of homemaking?
- Can any of the hazards of homemaking be eliminated or reduced? If so, how?
- Do other members of the family need to be "educated" to the hazards homemakers are exposed to? If so, how can this be done?
- What role, if any, can the nonhomemaking members of the family can play in alleviating the safety and health risks to the homemaker?
- What role, if any, can society at large play in improving the working conditions of homemakers--for example, by providing safer cleaning products and more recognition of the value of homemaking as a career, and by making convenient, reliable day-care facilities available to reduce time pressures and stress.

ATTITUDES THAT HELP

Here are some attitudes that encourage people to take actions or precautions on behalf of health and safety. What others can you think of?

- It is important to speak up for what I believe in.
- I think good safety practices make good business sense. They can cut down on absenteeism, reduce health care costs, and increase productivity.
- If I don't watch out for my own health, I can't assume anyone else will.
- My health is very important to me.
- It's worth a small inconvenience to take the necessary precautions.
- I don't care what other people think. If they don't respect my rights, they aren't really my friends.
- I have influence with my friends and can try to persuade them to do what's right.
- Good health and safety practices can do a lot for the public image of the company.
- I think it's important to try to explain the importance of safety and health precautions to others.
- I'm prepared to base my job choice on health considerations.
- As a manager, I want to do my best to improve employee morale. Creating a healthful and safe environment shows employees that the company really cares.

ATTITUDES THAT HINDER

Here are some attitudes that hinder people from taking actions and precautions on behalf of health and safety. What others can you think of?

- It won't happen to me.
- I'm more careful than other people (which is really a variation on "It won't happen to me").
- It's too awful; I just don't want to think about it.
- I'm afraid of how I look to others.
- My friends will think I'm being ridiculous (variation on "I'm afraid of how I look to others").
- I just don't want to take the extra time.
- It's too hard to remember all those details; life's complicated enough (a variation on "I just don't want to take the extra time").
- It's all in the cards. Whatever happens happens. There is nothing I can do about it.
- I'm not paying attention to what THEY say. They are always setting unnecessary rules and regulations.
- I'm a man. You won't catch me acting like THAT (which is a variation of "I'm afraid of how I look to others").
- I'm a woman. It just wouldn't be right for me to look (say, do) that (which is a variation of "I'm afraid of how I look to others").
- I've got to take the job as it is. I need to eat and can't risk losing my job.

VIGNETTES

Vignette # 1

You are a steel worker who works on top of a coke oven battery. You have just started work and been told by your supervisor to wear a respirator (face mask) whenever you see smoke coming out of the battery. There is a high risk of lung cancer on this job, he has told you, but you will not have any problems if you wear your respirator.

When you get to the battery on your first day at work, you notice that no one else is wearing a respirator, even though it is pretty smoky. As you start to put yours on, a worker next to you says, "You won't be wearing that for long."

What do you do? Will you be wearing your respirator two weeks from now? Why or why not? Will your wearing the respirator absolve your employer from removing the source of the hazard? Will the respirator impede your performance or cause you undue discomfort? What other issues will be important for you to consider in your decision to wear the respirator?

Vignette # 2

You operate a sewing machine in your job, and it has a safety shield to protect you from flying needles. However, not many people in the factory use shields, because they are hard to see through and they get in the way of your work. And the faster you work, the more you get paid.

However, yesterday a worker on the other side of the room let a scream as a flying needle lodged in her cheek. She had to go to the hospital and was lucky she did not lose an eye.

Do you decide to use your shield now? Why or why not?

Vignette # 3

You are a roofer, and during the summer you are tempted to take off your shirt to be cooler. However, you have just learned that exposure to sun increases your chances of getting skin cancer, and a shirt would help protect you. In addition, a strong sun lotion on your face would help protect your face, too. But it's a nuisance to do this, because you sweat a lot you have to put the lotion on two or three times a day.

Do you keep your shirt on? Do you put on skin lotion? Why or why not?

Vignette # 4

In your work you come into contact with asbestos, which can cause lung cancer and asbestosis (a dust disease of the lungs). Recently, you have developed a slight cough, and you know you should have some tests done to see if anything serious is developing. However, you will have to pay about $100 for the tests. You are also afraid that if a disease is discovered, you will lose your job.

Do you go for a checkup? Why or why not?

Vignette # 5

You live in a coal mining region where most of the members of your family have worked in the mines for two generations. You would like to stay in the area, because it's your home and all your relatives are there. However, the only work you can get is in the mines. You know that mining is the most dangerous job in the country, and some of your relatives and friends have either been killed in mining accidents or developed "black lung" disease.

Do you go to work in the mines and stay with your family and friends, or do you move out of the region and find safer work somewhere else?

Vignette # 6

You are a nurse and have a chance to transfer from the boring ward you are on now to another one where the cases are more interesting: patients who have just been operated on. However, on the new ward you will sometimes have to lift patients, and you have had problems with your back. Twice in the past ten years you have had to spend two weeks in bed because of back pains. But the new job also pays more than your old one.

Do you accept the transfer? Why or why not?

Vignette # 7

You are an electrical worker, and you have been asked to use wiring that you know does not meet safety standards. However, the builder you work for has just laid off several electricians and and may be planning to lay off more. This has upset you a lot, because you need the job, and because you have worked for the company for years and have rarely been absent.

How far are you willing to go to see that the proper wire is used?

Vignette # 8

You are a secretary and have learned that the headaches you have been having may be caused by fumes from the duplicating machine you use frequently to copy your boss's papers.

What, if anything, do you do? Why?

Vignette # 9

You are an executive in a large company and are under a lot of pressure to do well and meet deadlines. You like your work, but your doctor has told you that if you don't slow down or change jobs, you are going to develop an ulcer or even have a heart attack. Your blood pressure is high.

What, if anything, do you do? Why?

Vignette # 10

You work in an office with coworkers who smoke. You find their smoke very irritating and know that it poses health hazards to you. You also know that your coworkers may resent it if you bring the matter up with them or with management.

What, if anything, do you do? Why?

Activity Three

Finding Reliable Information

Objectives

Cognitive: Students will be able to:

- Name at least three sources of information on occupational health and safety.

Affective: Students will:

- Become confident that they can find information on occupational hazards for any profession or industry.

Skills: Students will:

- Develop research and study skills.
- Develop interviewing skills.

Activity at a Glance

Students develop an inventory of resources for learning about the safety and health risks of any job by investigating the hazards of an occupation of their choice. In this activity they plan how to conduct their research and arrange for doing it. In Activity Five they will share what they have learned.

Preparation

1. Bring to class any pamphlets, brochures, or books you may have ordered from OSHA, the American Lung Association, or

from organizations or publishers listed in the bibliography at the end of this guide.

2. Duplicate, one for each student, or plan to read aloud, the list of "Sample Occupations."

3. Duplicate the "Research Plan" sheet, one for each group of students.

4. In preparation for the homework assignment, get large sheets of butcher paper or newsprint--one sheet for each group of students.

5. Copy on the blackboard the chart "Research Findings," which appears at the end of this activity.

Procedure

Note to Teachers: The following procedural steps suggest on-site interviews conducted by students as they research the hazards of certain occupations, which, when done carefully, can take several hours of out-of-school time. A time-saving but less effective alternative is to have students develop a research plan and the questions to be asked but confine their actual research to printed materials.

1. Explain that in this activity students plan the research they will carry out on the hazards associated with an occupation of their choice. Although they should gain useful information about the hazards of a particular job, the main purpose of the activity is to learn how to identify, use, and evaluate methods for discovering the safety and health risk of any occupation. By the end of the class period, students should have developed a list of sources for information and a set of questions they will ask. Their plans should state clearly who will be asking what of whom.

2. Students can conduct the activity in pairs or small groups. Have them select an occupation they are familiar with or choose from the list of "Sample Occupations." (You may either duplicate the list or simply read it aloud. For a more complete list, consult pages 368-419 in J. M. Stellman and S. M. Daum, Work Is Dangerous to Your Health. See bibliography for publication information.)

Students have interviewed family members about their jobs in an earlier homework assignment; they may wish to use the occupation of one of their family members for research. However, be aware that investigation of a relative's occupation may be an emotional experience, both for the student and for the family member. If students choose to do this, it might be wise to contact parents and explain the assignment. If students are going to visit their parents' work sites, be sure to have parental approval first.

It may be most practical to encourage students to study occupations that are common locally. It will be easier to get information on local industries, and students are more likely to know people who work in them. Encourage students to visit actual work sites, but be sure to gain the approval of management first. Many companies have Safety and Health Directors who might be willing to meet with groups of students. Union leaders might also be sources of information. Depending on the maturity of your students and their personal contacts, it might be appropriate for you to make the initial overture to the businesses your students wish to visit. Students could then be responsible for follow-up calls to establish the date, time, and other details of the visit. Your school administration should also be apprised if work site visits are planned.

3. Ask the students to identify useful sources of information for learning about the job hazards of the occupations they have chosen to investigate, and write these sources on the blackboard as they list them. Supplement the list with the following:

<u>Interviews: Who to Question?</u>

- Workers
- Union officials
- Supervisors
- Management officials
- Company medical staff
- Staff of local, nonprofit worker groups
- Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH), and National Cancer Institute (NCI) staff
- Industrial hygienists and public health and safety researchers at local universities, hospitals, and certain

voluntary health organizations, such as the American Lung Association

Observing and Touring Workplaces: Who to Contact?

- Personnel director
- Human resource director
- Health and safety officer
- Union leader

Reading Pertinent Literature: Sources (See specific recommendation in "Other Recommended Programs and Resource Materials" at end of this guide.)

- OSHA, NIOSH, NCI
- Independent researchers
- Nonprofit worker groups
- Libraries

4. Ask students to plan how they will conduct their research on a particular occupation. Be sure their plans are realistic: will they have access to pertinent pamphlets and books? Can they arrange a visit or telephone interview with workers? With management? With staff from the regional OSHA office? How will they get there? When can they go?

Once the students have made their decisions, distribute a "Research Plan" sheet to each group and have them fill in the top portion. Ask students to share their plans with one another. Pay special attention to the kinds of help students say they will need, and, as a group, try to make the necessary arrangements.

5. Next, brainstorm the sorts of questions students should try to answer in their research. Try eliciting the questions from students first, as the process of question-making is, in itself, a very important one. If students get stuck, use the following list as a guide. Of course, students may suggest many other important questions.

Questions to be answered by workers, management, occupational health experts, or reference materials:

- What are the main health risks associated with this job.

  Does the employee handle or work near substances that are toxic, or hot?

  Is the air dusty?

  Are there fumes, vapors, or mists in the air?

  Is the work environment very noisy?

  Is the work environment very hot or cold?

  Is the lighting adequate?

  Do workers experience stress on their jobs? If so, what kinds? From what sources?

- What are the main safety risks associated with this job?

  Is there a chance the employee, equipment, or materials can be caught in, on, or between objects?

  Is there a danger the employee, equipment, or materials can fall to a lower level?

  Can an employee slip, trip, or fall because of materials or objects in the area?

  Is there a chance of an employee or equipment being struck or striking against some object?

  Is the situation such that an employee may be hurt by pushing, pulling, or lifting?

  Is the worker exposed to potentially dangerous flying objects?

- What problems or difficulties are there in eliminating these hazards?

- Is there agreement about the nature or severity of these hazards? If not, on what does the controversy seem to focus?

- Are there any government regulations that apply to this job?

- What, if anything, has management done about these hazards or potential hazards?

- What, if anything, have the employees done?

After a long list of possible questions has been generated, ask students to fill in the bottom half of their Research Plan. Be sure they specify exactly who will ask what question(s) of whom.

6. Homework: Explain that students will now be responsible for conducting their research and will share what they learn in Activity Five. Pass out the butcher paper or newsprint (one piece to each group) and ask them to copy the chart, "Research Findings," which you have put on the board onto the butcher paper. Explain that after doing their research and in preparation for Activity Five, they should fill in the chart. Encourage them to do a large size chart, preferably using broad-based magic markers so that it will be easy to share their findings with the other groups.

SAMPLE OCCUPATIONS

actors and actresses
airline flight attendants
asbestos workers
auto repairpersons
bakers
clerks and retail salespersons
coke oven workers
construction workers
cooks
copper smelter workers
dentists
doctors
dry cleaners
dye makers
executives
farm workers
fire fighters
flax, hemp, and cotton workers
glassmakers
hairdressers and beauticians
homemakers
insulation workers
laundry workers
lawyers
metal workers
miners
nurses
office workers
painters and paint makers
plastics workers
police officers
postal workers
printers
roofers
rubber workers
salespersons
secretaries
solvent makers and users
stock analysts
taxi drivers
teachers
textile workers
wood makers

RESEARCH PLAN

Investigating Occupational Hazards

Name(s) _____ _____

_____ _____

_____ _____

Class _____

I (we) plan to research the hazards of the following occupation:

_____

I (we) plan to gather information from the following sources (include people, visits to places, books and other reference materials):

_____

_____

I (we) will need the following kind of help:

____ Transportation ____ Names of people to contact within the industry

____ Telephone numbers ____ Ideas for books or pamphlets

____ Other: _____

_____

• • • • • • • • • • • • • • • • •

I (we) plan to find the answers to the following questions from the sources indicated:

Who Will Do the Questioning?	What We Will Ask	Source of Information We Will Use:

RESEARCH FINDINGS

Occupation Studied _____ Group Members _____

_____

Risks	Problems Eliminating the Hazards?	Controversy? If so, what?	Actions Taken so far?	Sources of Information	Other Interesting Findings
	Health:		By management:		
	Safety:		By employees:		

Activity Four

Workers Helping Workers

Objectives

Cognitive: Students will be able to:

- Identify some reasons why people do and do not take work-related safety and health precautions.
- Identify some effective techniques for offering advice to or trying to influence the behavior of coworkers.

Affective: Students will:

- Recognize that they can influence coworkers to adopt healthful practices.

Skills: Students will be able to:

- Express concern to a coworker (in role plays and other fictional settings) about adopting necessary health and safety precautions.
- Assert themselves in potentially awkward situations where taking a stand may not be a popular thing to do.

Activity at a Glance

Students role play scenarios in which workers encourage coworkers to protect their safety or health on the job. Optional ways of doing the activity without role playing are also provided.

Preparation

Duplicate the "Role Profile Sets," in a number equal to half the number of students in your class, and cut each page in half to separate Role Profile A from Role Profile B.

Procedure

Note to Teachers:

It is important for several reasons that workers educate one another about the health and safety risks associated with their jobs. First, some workers have little confidence in the job safety and health advice given to them by management, government, and health professionals; they are more likely to trust their coworkers' advice. In addition, it will not be possible for any of these other sources of information to reach every worker at risk with job-related safety and health information. A "snowballing" method of education is therefore essential by which those relatively few workers who are reached by employers, health professionals, and government information campaigns pass on what they have learned to their coworkers. Finally, people are receptive to certain information at different times in their lives. Often they are simply not ready to assimilate and use advice from management or government agencies about their safety and health. Fellow workers, however, often are on hand at precisely those "teachable" moments when a coworker is most receptive to a safety or health message.

Offering help, especially when it is uninvited, is not always easy. Being an effective helper requires tact, patience, self-confidence, and the willingness to take a stand. Many people are not born with all these skills, but luckily, with practice many can be developed. This activity gives students practice offering advice to their peers and urging them to follow safe and healthful work place procedures.

The role plays provided in this activity have a dual purpose. The first goal is to help students examine some of the reasons why people and do not take proper safety and health precautions on the job so that they can better understand their own attitudes toward risk-taking behavior. The second goal is to provide students with an opportunity to practice peer education techniques that take into

account the reasons different people fail to protect their safety and health on the job--techniques that students can use later in life as employed people.

The first role play involves a nurse who wants to persuade a less careful coworker to adopt two safety and health precautions. The second role play involves a worker whose own safety and health are threatened by a coworker who refuses to follow proper safety measures on the job. This role play indicates that workers may want to engage in peer education for their own self-interest and should learn how to tactfully tell their colleagues not to jeopardize the health or safety of other employed people. The third role play concerns a husband and wife. Although it is not a case of peer education among coworkers, the exercise is important because spouses can sometimes be more effective in motivating each other to be careful on the job than can coworkers. Adolescents should realize that as family members they will have excellent opportunities to promote job safety and health among their spouses and children.

1. Before having the students role the scenarios, ask them whether and why they think it is valuable for workers to encourage healthful practices in other workers; then present the reasons suggested in the "Note to Teachers" if students do not come up with them themselves.

2. Have half the class read only Role Profile A in Set 1 and the other half read only Role Profile B in Set 1. Then ask for volunteers to take the parts. If there are no volunteers, you might ask particular students to take the parts, but do not require anyone to take a role. To encourage volunteers you might do the following:

- Allow the students to conduct the role play from their seats, rather than in front of the entire class.
- Take one of the two parts yourself.
- Invite another teacher into the class and both of you conduct the initial role play.
- Break the class into small groups and have each group perform the role plays at the same time and then report its experience to the rest of the class. (This approach has the advantage of allowing more students to engage in the role plays and reduces any self-consciousness, but it also requires additional time.

3. Before opening the discussion to the whole class, ask the role players to describe how they felt as they acted out the scene. First encourage them to express any feelings they may have had about the role-play process (e.g., embarrassment, involvement, stage fright, etc.). Then ask them how they felt in their role: What did they want? How did they feel? How did other characters in the scene affect them or make them feel?

4. After hearing from the role players, invite the whole class to join the discussion. Focus the discussion on these questions:

- Which strategies pursued by role player A appeared to be effective in persuading player B to follow good work practices? Which strategies appeared to be ineffective? What accounted for the success or failure of each of the strategies employed? List the strategies mentioned on the board in two columns.

- Was player A reluctant to engage his or her coworker on the health and safety issues? Would he or she be in real life? Why are some people hesitant to speak up, offer advice, or take action? In your opinion, what are valid reasons for not doing so and what are not? When are the best and worst times or occasions on which to approach coworkers on these kinds of issues?

- What did the players do or say that observing students would have done differently? Why would they have said or done it differently?

- Why bother to educate other workers on the job? Can it serve your self-interest as well as another person's?

5. Repeat steps 2, 3, and 4 for the other role plays provided. If time allows, students working individually or in small groups, can write their own set of role profiles to be acted out by other members of the class.

6. Alternatives to Role Playing:

- Ask students to read both role profiles and then discuss how they think role player A in each instance should approach role player B.

- Rewrite the Role Profile A scenarios as Dear Abby letters asking for advice on how to approach a coworker. The class, individually or in pairs, could then provide the advice and later discuss the responses.

7. Go back to the lists of strategies generated in Step 4 to conclude the activity. Ask students to summarize what they learned about approaching fellow workers about safe and healthful work practices and which strategies they would be most likely to use in making an approach.

8. Optional Activity. Even though this activity focuses on workers and their role in promoting workplace health and safety, you may want to point out that managers and supervisors often are in an especially good position to help protect the health of workers for whom they are responsible. Ask students to design additional role plays that create some situations in which supervisors attempt to promote worker health and safety, perhaps in the face of worker resistance. Underscore the fact that, regardless of a person's position in an organization, everyone has an opportunity to affect worker health, but managers and supervisors are in an especially good position to do so.

9. Reminder: Be sure to tell students to bring in their completed "Research Findings" charts to the next class period.

ROLE PROFILE SET 1

Role Player A: Nurse

You are a nurse at United Illness Hospital and have been working there for 12 years. You enjoy your work, although you're not crazy about being exposed to so many diseases and having to lift so many patients. But you've been careful to wear gloves and face masks, when needed, to avoid diseases. You have also tried to have another nurse around when you lift a patient.

A couple of months ago, a friend of yours who used to be a nurse at a hospital across town came to work at United Illness. You've noticed that your friend takes some risks with safety and health. For example, your friend never wears gloves when taking blood from patients who may have viral hepatitis and so risks getting infected, too. Your friend also lifts heavy patients without getting help--even though your friend complains once in a while about having backaches.

You've decided to urge your friend to wear gloves when taking blood from patients with viral hepatitis. It's really very simple to do, even though it seems like such a bother to get gloves, put them on, and then throw them away afterwards. At first, it's a little more difficult taking blood with them on, but soon it becomes just as easy without them. You also plan to tell your friend not to lift patients alone, but to get another nurse or two to help.

You're having lunch together, and now you've decided to urge your friend to be more careful about taking blood and lifting patients. What do you say?

Role Player B: Nurse's Friend

You have been a nurse for ten years, and two months ago you took a new job at United Illness Hospital where the work is more interesting. United has more and unusual disease among its patients than had the other hospital where you used to work.

You know that there are some risks in being a nurse in a hospital, like being exposed to infections and developing back problems from lifting patients, but you don't think the risks are very serious. You could wear gloves when you take blood from patients who have certain diseases, like viral hepatitis. This is what many of the other nurses do. But gloves are a nuisance. Besides, you have trouble drawing blood when you're wearing the gloves, and the patients complain when you hurt them as a result.

You must admit that you have had a few backaches from lifting heavy patients by yourself, but as long as your back doesn't get worse, you're not going to worry about it. You know that you could get help from other nurses in lifting patients, but you feel guilty dragging them away from their work to help you. It's so much easier just to lift the patient right then and there by yourself.

You're having lunch with a friend who is also a nurse at United Illness. Your friend is careful about making sure not to catch any patient diseases and to lift patients properly. If your friend were to suggest that you be more careful, what would you say?

ROLE PROFILE SET 2

Role Player A: Topside Coke Oven Worker

You work in a steel plant on a coke ovem battery that is two football fields long and three stories high. The battery turns coal into coke, which is used elsewhere in the plant to heat up the steel. You work on top of the battery where part of your job is to fill the oven with coal and make sure no smoke escapes from the battery while the coal is being heated.

You know that you have a very high risk of getting lung cancer from any smoke that does escape from the battery, so you do your best to keep the lids on the battery to stop up the smoke. However, the door cleaners, who work 20 feet below you on the sides of the battery, have not been doing a good job cleaning the oven doors. As a result, some of the smoke leaks out the doors. When the wind is blowing in the "wrong" direction, the smoke gets blown up to you.

You know that cleaning the doors is dirty and hard work, but you're angry that the cleaners put you at risk by not doing their job well. You also know that cleaning the doors properly can slow up the work a bit, with the result that you and the other workers might lose some money. But you're more concerned about your health than the money you might lose.

A worker whom you give a ride home to every week has just become senior door cleaner. If you could get this worker to do the job right, all the other door cleaners probably would, too. You've decided to ask this door cleaner to take the time to clean the doors properly. What do you say?

Role Player B: Coke Oven Door Cleaner

You work in a steel plant on a coke oven battery that is two football fields long and three stories high. The battery "cooks" coal, turning it into coke, which is then used elsewhere in the plant to heat up the steel. You work on the side of the battery where part of your job is to keep the doors clean.

You have just been made the senior door cleaner, a job you've always wanted because it pays well and you need the extra money for your three children, one of whom has a lot of medical bills. However, you don't really like the work you have to do, because cleaning the doors is hard and dirty. You like to get it done as soon as possible. In addition, as soon as you get the doors cleaned, more coal can be dumped into the battery and heated into coke. And the more coke you produce, the more you get paid.

You know that when you don't clean the doors thoroughly, some smoke leaks out. When the wind is blowing in a certain direction, the smoke blows up to the people who work on the top of the battery. This bothers you a little, because you know that the workers on top have a very high risk of getting lung cancer because of the smoke that can come out of the top of the battery, as well as the side. But you figure the added smoke from the doors that blows up to the top probably doesn't worry the topside workers--they're more concerned with the smoke coming out of the top of the battery.

You're driving home now with a worker who works on the top of your battery. But the worker seems concerned about something, and you wonder if it's the smoke that blows up to this worker when you don't clean the doors properly. If this worker asks you to clean the doors more carefully, what will you say?

ROLE PROFILE SET 3

Role Player A: Worker's Spouse

Your husband is an accountant with the Finest Accounting Company. He works very hard supporting you and your three children--too hard, in fact. While he doesn't spend too many weekends at the office, he does have to work two or three nights a week, sometimes getting home after midnight.

He also comes home many evenings very tense and upset because his work is so hectic. He's doing well at Finest Accounting and wants to become a vice-president because of the higher salary, prestige, and job security the position will bring.

On the evenings when he comes home early, he sometimes gets angry at you and is too tired to play with the kids. After dinner he needs to relax, so he watches television and falls asleep. More often, he has some papers to work on and goes upstairs and shuts the study door.

You've told him before that bringing his problems home from work makes life unpleasant when you're together and isn't good for the children either. But now you're ready to put your foot down. Just last night, when you had both planned to go to a movie, he came home and said he couldn't go out because he was "too tired" and had "a few papers to go over." When you complained, he yelled, "What do you expect me to do, quit my job so you can see a lousy movie?"

Today is Saturday, and you and your children and husband have spent a peaceful day at the beach. Even though you don't want to ruin the day, you feel it's a good time to talk about how your husband's exhausting and nerve-wracking work is making things very unhappy for you and the kids.

It's evening and the children are in bed. You're both having coffee in the kitchen. What do you say?

Role Player B: Hardworking Accountant

You are an accountant with the Finest Accounting Company. You work very hard at a job that is full of excitement--but also full of tension and pressure. However, you feel it's worth it because you enjoy the work and hope to become a vice-president. Then you'll have a good salary, prestige, and job security.

You are concerned, however, because you sometimes have to work late at night and often come home tired and touchy, even on those evenings when you quit work early. Sometimes you have so much on your mind from work that you hardly feel like talking with your wife or playing with your kids.

Your wife has told you a couple of times about how much your being so tired and nervous bothers her and the kids, but you don't see what you can do about it. You'd be fired if you tried to cut down on your work load. It's just something you'll all have to live with for a few more years until you become vice-president. It's sure no fun for you either to stay late at work and come home grumpy.

Today was Saturday, and you and your family were able to go to the beach and have a pleasant, relaxing day together. Now that it's evening and the kids are in bed, you're having a cup of coffee in the kitchen with your wife.

But your wife seems to have something on her mind to discuss. You wonder if it's about your working so hard and coming home tired and tense so often. If this is the problem and your wife wants to discuss it, what will you say?

Activity Five

Sharing Research Findings

Objectives

Cognitive: Students will be able to:

- Identify risk(s) associated with at least one occupation they have researched and two others reported on by classmates.
- Recommend reliable sources of information on occupational health and safety for any profession or industry one might wish to investigate.

Affective: Students will:

- Become confident that they can find information on occupational hazards for any profession or industry.

Skills: Students will:

- Report on research findings.
- Draw inferences and make judgments about the reliability and quality of information gathered from various sources.

Activity at a Glance

Students share the data they have collected on occupational hazards and draw conclusions about where to find reliable information.

Procedure

1. Have each group pick a spokesperson to explain the group's major findings. As the spokesperson talks, other group members can hold up the chart the group completed for homework. Alternatively, ask the class to gather round the chart being discussed. Allow each group five to ten minutes to present and discuss its data.

2. In the last 10 to 15 minutes of the class, move away from discussion of particular occupational hazards to a broader evaluation of available sources of information. Encourage students to consider:

- What source of information provided the <u>most</u> information about the occupations they investigated?
- What sources seemed to provide the most <u>reliable</u> information?
- What sources did <u>not</u> appear to provide much or reliable information?
- Why were some sources more reliable than others?

3. Ask students to summarize the class discussion in writing so they can share the information with their families, if they so desire. They can also use the summaries as a means of discussing with their families other things they learned from the module.

Other Recommended Programs and Resource Materials

CURRICULA

Finn, Peter. Teaching Occupational Health and Safety at the Secondary and College Level. Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance, 1980.

The activities in this THINK module have been adapted from this excellent teaching guide, which contains 18 suggested lesson plans, excellent background information, and an extensive bibliography. We strongly recommend that teachers who wish to supplement the activities in this module with more extensive follow-up work order this guide. Available from AAHPERD, 1900 Association Drive, Reston, VA 22091.

Firenze, R., and Walters, J. Safety and Health for Industrial/ Vocational Education developed by Division of Training and Manpower Development, Curriculum Development Branch, U.S.D.H.H.S., NIOSH and OSHA, July 1981.

This guide for administrators and vocational education instructors focuses on ways to establish and administer effective safety and health programs in vocational schools. It provides technical information on typical hazards associated with different vocational shops and demonstrates the relationships between hazards encountered in the shops and those existing in industry.

BOOKS

Titles of books that are particularly useful for instructors who wish to gain a background in occupational safety and health sufficient to teach the topic are followed by an asterisk.

Work Is Dangerous to Your Health,* by Jeanne Stellman, Ph.D., and Susan Daum, M.D. Vintage Books, New York, 1973. $1.95. Paperbound. An easy-to-read account of health hazards in the workplace and what workers can do about them.

Bitter Wages,* by Joseph A. Page and Mary-Win O'Brien. Grossman, New York, 1973. $2.50. Paperbound. Ralph Nader's Study Group Report on disease and injury on the job. Discusses nature of job safety and health problems and provides analysis into the political issues they have spawned.

Crisis in the Workplace: Occupational Disease and Injury,* by Nicholas A. Ashford. MIT Press, Cambridge, Massachusetts, 1976. $11.50. Clothbound. Comprehensive Report to the Ford Foundation, which describes the nature of job safety and health problems in America and the legal, social, and political issues surrounding efforts to solve them.

Women's Work, Women's Health: Myths and Realities,* by Jeanne Mager Stellman. Pantheon, New York, 1977. $3.95. Paperbound. Thorough discussion of both the potential effects of workplace hazards on women workers and the social, political, and legal issues involved in making the workplace safe for women and men.

Working for Your Life: A Woman's Guide to Job Health Hazards by Andrea Hrico and Melanie Brunt. Labor Occupational Health Program and Public Citizen's Health Research Group, Berkeley, California, 1976. $5.00. Paperbound. Description of how jobs can affect the health of women workers, hazards on jobs where large numbers of women work, and ways to recognize hazards and make changes at the workplace.

Cancer and the Worker. The New York Academy of Sciences, New York, 1977. $2.00. Paperbound. Comprehensive but nontechnical discussion of not only the dangers posed by working with or near carcinogenic substances, but also the political and social issues involved in preventing occupational cancer.

Muscle and Blood, by Rachel Scott. Dutton, New York, 1974. $8.95. Clothbound. Journalistic account, replete with worker interviews, of the hazards and disasters in different blue collar industries.

Expendable Americans, by Paul Brodeur. Viking Compass Books, New York, 1974. $3.45. Paperbound. Revealing presentation of attempts by medical, government, and industry authorities to ignore the hazards to workers of working with asbestos.

How to Use OSHA,* by Urban Planning Aid. Cambridge, Massachusetts, 1975. $3.00. Paperbound. Discussion of how employed people can reduce their workplace hazards by taking advantage

of the Occupational Safety and Health Administration's mandate to protect them. Available from Urban Planning Aid, 100 Arlington Street, Room 228, Boston, MA 02116.

Work in America: Report of a Special Task Force to the Secretary of Health, Education, and Welfare. MIT Press, Cambridge, Massachusetts, 1973. $3.95. Paperbound. Discussion of the nature of work in America, problems of American workers, and solutions to these problems. One chapter is devoted to occupational safety and health problems, but many other parts of the book relate to this field, as well.

Industrial Health by Jack Peterson. Prentice-Hall, Englewood Cliffs, New Jersey, 1977. $21.00. Clothbound. Thorough discussion of occupational health problems. Some chapters require background in chemistry to understand.

The Industrial Environment: Its Evaluation and Control, National Institute for Occupational Safety and Health. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 1973. $13.75. Clothbound. Standard textbook covering all major aspects of occupational safety and health in chapters written by experts in their respective fields. Often very technical.

Encyclopedia of Occupational Health and Safety, International Labor Organization. 2 Volumes. McGraw-Hill, New York, 1972. $59.50. This is an excellent resource document for inclusion in any library of materials on occupational safety and health. Written by experts in the various fields of job safety and health.

Occupational Diseases, a Guide to their Recognition, National Institute for Occupational Safety and Health, Center for Disease Control, Public Health Service, U.S. Department of Health, Education, and Welfare, Rev. 1977. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, GPO 017-033-00266-5, price: $5.25. This paperbound book is the best and easiest reference for looking up hazards by name. Information such as potential occupational exposures, permissible exposure limits, routes of entry, harmful effects, medical surveillance, and personal protective methods are given. If you only buy one book, this should be it.

PAMPHLETS AND BOOKLETS

The following materials are available from your local lung association or the American Lung Association, 1740 Broadway, New York, NY 10019.

"Occupational Lung Diseases, an Introduction" (Item #3500). American Lung Association, New York. An overview of occupational lung diseases, how lungs react to dirty air, types of lung hazards and the diseases that can result, ways to make workplaces safe.

Sources of Information on Occupational Health. This bibliography is a supplement to Occupational Lung Disease, an Introduction. American Lung Association, New York, 1979.

A series of pamphlets "Lung Hazards on the Job." Each focuses on a particular hazard, e.g., asbestos, auto repair, byssinosis, fire fighting, irritant gases, silicosis, solvents, and welding. Pamphlets on other hazards are added from time to time.

Lung Hazards in the Workplace (12-page pamphlet), American Lung Association.

The following pamphlets are available from your nearest OSHA office (see addresses in this part) or may be ordered from OSHA Publication Distribution Office, U.S. Department of Labor, Room S-1212, Washington, D.C. 20210. Single copies are free. A list of additional OSHA publications may be obtained by writing for OSHA Publications and Audiovisual Programs, Document 2019. In particular we recommend that you order materials on workplace hazards, such as cotton dust, noise, and toxic chemicals which would be very helpful for students wishing to research particular hazards. Such hazard-specific pamphlets are too numerous to list in this space.

You can also request from your nearest NIOSH office (see addresses below), the NIOSH Publications Catalogue, NIOSH No. 80-126. Your name can be placed on the NIOSH mailing list upon written request to NIOSH, Office of Public Information, 4646 Columbia Parkway, Cincinnati, Ohio 54226.

The Occupational Safety and Health Act of 1970 (OSHA 2001), December 1970. Full text of the Act.

Job Safety and Health Protection (OSHA 2201), June 1975. Alphabetical digest of OSHA standards for general industry in nontechnical language, covering 90 percent of the basic applicable standards.

Protection for Workers in Imminent Danger (OSHA 2205), April 1975. Booklet providing employees with an interpretation of imminent danger, with guidance in reporting such situations, and with related personal rights.

A Guide to Worker Education Materials in Occupational Safety and Health, Volume 1, 1979, and Volume 2, 1980. Available from OSHA. Volume 1: Listing of materials produced by citizens' organizations and college and university labor education programs. Volume 2: Listing of materials produced by labor unions.

OSHA: Your Workplace Rights in Action--11-C (OSHA 3032), 1978. Available from OSHA. Booklet contains information on the rights of employees, under Section 11-c of the Act to protect their lives on the job.

Job Safety and Health: OSHA Inspections Are Only the Beginning (OSHA 3029), 1979. Available from OSHA. A detailed discussion of steps employees can take to help follow up on OSHA inspections, including an explanation of the procedures for contesting OSHA actions.

Workers' Rights under OSHA (OSHA 3021), 1979. Available from OSHA. A summary of workers' rights, including such topics as access to information, participation in inspections, and state programs.

OSHA Inspections: How You Can Help (OSHA 3023), 1979. Available from OSHA. A workbook explaining how employees can help make OSHA inspections more effective, with space to make notes during an inspection.

OSHA Health Inspections How You Can Help (OSHA 3024), 1979. Available from OSHA. A workbook detailing how employees can help make OSHA health inspections more effective, with space to make notes during an inspection.

Investigating Accidents in the Workplace (OSHA 2288), 1977. Available from OSHA. Booklet contains step-by-step procedure for investigating accidents to prevent repetition.

IUD Spotlight on Health and Safety. Bimonthly newsletter put out by the AFL-CIO. Free. Write to AFL-CIO Industrial Union Department, 815 - 16th Street, N.W., Washington, D.C. 20006.

Lifelines. Bi-monthly newsletter of the Oil, Chemical, and Atomic Workers Union. $5.00/year. Write OCAW, 1636 Champa Street, Denver, Colorado 80202.

Occupational Health and Safety Newsletter. Bi-monthly newsletter of the United Auto Workers. $3.00/year. Write to: UAW Social Security Department, 8000 East Jefferson Avenue, Detroit, Michigan 48214.

Health/PAC Bulletin. Monthly periodical put out by the Health Policy Advisory Center, frequently featuring articles on occupational safety and health. $10.00/year. Write to Health/PAC, 17 Murray Street, New York, New York 10007.

More technical or less readily available periodicals and newsletters carried by some large libraries include Employment Safety and Health Guide, Occupational Safety and Health Reporter, Toxic Materials News, Job Health News Service, Journal of Safety Research, National Safety News, and Occupational Hazards. The Federal Register publishes all new standards on occupational health. Past standards can be requested from local OSHA offices, and citizens can ask to be put on the OSHA mailing list to receive all future standards. For OSHA addresses, refer to the following section.

AUDIOVISUAL RESOURCES

Audiovisual Resources in Occupational Safety and Health, NIOSH No. 82-102. A very complete alphabetical listing of films, videocassettes, slide shows and audio cassettes on a variety of hazards produced by government, independent filmmakers, and universities. Write NIOSH, 4676 Columbia Parkway, Cincinnati, Ohio 54226.

"Who Will I Sentence Now?" is a powerful documentary, produced by the National Film Board of Canada, on the subject of disease contracted in the workplace. Filmed at several different locations in Canada, the camera captures scenes in which fumes, flames, and toxic dust fill the air. Interviews with doctors, widows, a union leader, a number of severely disabled workers substantiate the facts behind this deeply disturbing picture. In color and 29 minutes in length, it is available from EDC Distribution Center, Department 103, 55 Chapel Street, Newton, Massachusetts 02160.

The following five films are available from the AFL-CIO, Department of Education, 815 - 16th Street N.W., Washington, D.C. 200006. A $5.00 rental fee plus return postage by UPS is requested.

"Can't Take No More." Produced in 1981 by the Department of Labor, this film gives a historical overview of the long fight for protection against hazardous working conditions. In the past, there were few rules governing safety and health. Pressure for change was often effective only after a major tragedy. Today workers no longer accept dangerous conditions as part of the job. They are questioning their working conditions,

calling on OSHA to investigate hazardous conditions on the job and they are exercising their right to work in a safe and healthy environment. 25 minutes.

"Worker to Worker." This film shows the many kinds of safety and health problems which workers encounter on the job. Sometimes these problems reach into the home and affect the health of spouses and children. Chemicals that create birth defects, cancer, and other illnesses are frequently used in the workplace by workers who are completely unaware of their deadly properties. Workers talk about OSHA and NIOSH and their experience in convincing others that they don't want to shut the plant down, they just want a safe place to work in. Workers who see this film will have a better understanding of how OSHA and NIOSH work together to protect their health and safety, and what their rights are under the law. Produced by Department of Labor, 1981. 25 minutes.

"OSHA." One out of every four workers is exposed to known health hazards, and one-third of all cancers are work-related. This film tells workers how OSHA was set up to stem the tide of disease, injury, and death and what their rights are under the law. It explains how NIOSH conducts tests, how standards are set, how OSHA inspectors come into the workplace to interview workers and investigate complaints. Workers talk about specific health hazards in textile mills and foundaries, and how their plants were forced to comply with the law. Produced by Department of Labor, 1981. 25 minutes.

"Health Hazard in the Shop," produced by the University of Wisconsin, explains the relationship of toxic fumes and substandes to disease and familiarizes workers with inspection procedures and their rights under the law. 25 minutes.

"Shop Accidents," produced by the University of Wisconsin, demonstrates how safety hazards are identified and explains a worker's right to file an anonymous complaint and to accompany the OSHA inspector on his or her inspection of the work site. 25 minutes.

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